

REQUEST FOR QUOTATION (THIS IS NOT AN ORDER)			THIS RFO <input checked="" type="checkbox"/> IS <input type="checkbox"/> IS NOT A SMALL BUSINESS SET-ASIDE		PAGE 1 OF 8 PAGES	
1. REQUEST NO. N65540-03-Q-0657		2. DATE ISSUED 03 SEP 12		3. REQUISITION/PURCHASE REQUEST NO. 99200 32129641		4. CERT. FOR NAT. DEF. UNDER BDSA REG. 2 AND/OR DMS REG. 1
5a. ISSUED BY CONTRACTING OFFICER NSWC CARDEROCK DIVISION				6. DELIVER BY (Date) 03 DEC 31		
5b. FOR INFORMATION CALL (NO COLLECT CALLS)				7. DELIVERY <input checked="" type="checkbox"/> FOB DESTINATION <input type="checkbox"/> OTHER (See Schedule)		
NAME 5001 S. BROAD STREET, CODE 335 PHILADELPHIA, PA 19112-1403 LINDA STIEMKE		TELEPHONE NUMBER AREA CODE 215 NUMBER 897-1355 FAX: 215 897-7059		9. DESTINATION N65540		
8. TO:				a. NAME OF CONSIGNEE NAVAL BUSINESS CENTER RECEIVING OFFICER NSWC CARDEROCK DIVISION		
a. NAME		b. COMPANY		b. STREET ADDRESS 1601 LANGLEY AVENUE BLDG 542 E		
c. STREET ADDRESS				c. CITY PHILADELPHIA		
d. CITY		e. STATE		f. ZIP CODE		d. STATE PA
						e. ZIP CODE 19112-5051
10. PLEASE FURNISH QUOTATIONS TO THE ISSUING OFFICE IN BLOCK 5A ON OR BEFORE CLOSE OF BUSINESS (Date) 03 SEP 23			IMPORTANT: This is a request for information and quotations furnished are not offers. If you are unable to quote, please so indicate on this form and return it to the address in Block 5A. This request does not commit the Government to pay any costs incurred in the preparation of the submission of this quotation or to contract for supplies or services. Supplies are of domestic origin unless otherwise indicated by quoter. Any representations and/or certifications attached to this Request for Quotations must be completed by the quoter.			
11. SCHEDULE (Include applicable Federal, State and local taxes)						
ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	
0001	REQN. NO. 99200 /32129641 MULTI-CHANNEL DATA ACQUISITION SYSTEM IN ACCORDANCE WITH THE ATTACHED SPECIFICATION OFFERORS ARE REQUIRED TO PROVIDE AS PART OF THEIR QUOTATION INFORMATION (PRODUCT CATALOG, BROCHURE, ETC.) ON THE PRODUCT THEY PROPOSE TO FURNISH FOR EVALUATION TO DETERMINE COMPLIANCE WITH THE SPECIFICATION REQUIREMENTS.	1	EA			
12. DISCOUNT FOR PROMPT PAYMENT		a. 10 CALENDAR DAYS (%)		b. 20 CALENDAR DAYS (%)		c. 30 CALENDAR DAYS (%)
						d. CALENDAR DAYS NUMBER PERCENTAGE
NOTE: Additional provisions and representations <input type="checkbox"/> are <input type="checkbox"/> are not attached						
13. NAME AND ADDRESS OF QUOTER				14. SIGNATURE OF PERSON AUTHORIZED TO SIGN QUOTATION		15. DATE OF QUOTATION
a. NAME OF QUOTER						
b. STREET ADDRESS				16. SIGNER		
c. COUNTY				a. NAME (Type or print)		b. TELEPHONE
						AREA CODE
d. CITY		e. STATE		f. ZIP CODE		c. TITLE (Type or print)
						NUMBER

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SECTION F TIME OF DELIVERY

DELIVERIES SHALL BE IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS

ITEM	QUANTITY	DELIVERY REQUIRED
0001	1 EA	03-DEC-31

52.213-4 Terms and Conditions--Simplified Acquisitions (Other Than Commercial Items) (AUG 2003)

(a) The Contractor shall comply with the following Federal Acquisition Regulation (FAR) and Defense Federal Acquisition Regulation Supplement (DFARS) clauses that are incorporated by reference:

(1) The clauses listed below implement provisions of law or Executive order:

(i) 52.222-3, Convict Labor (June 2003) (E.O. 11755).

(ii) 52.222-21, Prohibition of Segregated Facilities (Feb 1999) (E.O. 11246).

(iii) 52.222-26, Equal Opportunity (Apr 2002) (E.O. 11246).

(iv) 52.225-13, Restrictions on Certain Foreign Purchases (June 2003) (E.O.'s 12722, 12724, 13059, 13067, 13121, and 13129). (Note: The clause 52.225-13, Restrictions on Certain Foreign Purchases (JUN 2003) (DEVIATION) appearing in full text elsewhere in this document replaces this 52.225-13.)

(v) 52.233-3, Protest After Award (Aug 1996) (31 U.S.C. 3553).

(2) Listed below are additional clauses that apply:

(i) 252.204-7003, Control of Government Personnel Work Product (Apr 1992)

(ii) 52.232-1, Payments (Apr 1984).

(iii) 52.232-8, Discounts for Prompt Payment (Feb 2002).

(iv) 52.232-11, Extras (Apr 1984).

(v) 52.232-25, Prompt Payment (Feb 2002).

(vi) 52.233-1, Disputes (Jul 2002).

(vii) 252.243-7001 Pricing of Contract Modifications (Dec 1991)

(viii) 52.244-6, Subcontracts for Commercial Items (Apr 2003).

(ix) 52.253-1, Computer Generated Forms (Jan 1991).

(b) The Contractor shall comply with the following FAR and DFARS clauses, incorporated by reference, unless the circumstances do not apply:

(1) The clauses listed below implement provisions of law or Executive order:

(i) 52.222-19, Child Labor--Cooperation with Authorities and Remedies (Sept 2002) (E.O. 13126). (Applies to contracts for supplies exceeding the micro-purchase threshold.)

(ii) 52.222-20, Walsh-Healey Public Contracts Act (Dec 1996) (41 U.S.C. 35-45) (Applies to supply contracts over \$10,000 in the United States, Puerto Rico, or the U.S. Virgin Islands).

(iii) 52.222-35, Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans (Dec 2001) (38 U.S.C. 4212) (Applies to contracts

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of \$25,000 or more).

(iv) 52.222-36, Affirmative Action for Workers with Disabilities (June 1998) (29 U.S.C. 793). (Applies to contracts over \$10,000, unless the work is to be performed outside the United States by employees recruited outside the United States.) (For purposes of this clause, United States includes the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.)

(v) 52.222-37, Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans (Dec 2001) (38 U.S.C. 4212) (Applies to contracts of \$25,000 or more).

(vi) 52.222-41, Service Contract Act of 1965, As Amended (May 1989) (41 U.S.C. 351, et seq.) (Applies to service contracts over \$2,500 that are subject to the Service Contract Act and will be performed in the United States, District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, Johnston Island, Wake Island, or the outer continental shelf lands).

(vii) 52.223-5, Pollution Prevention and Right-to-Know Information (Aug 2003) (E.O. 13148) (Applies to services performed on Federal facilities).

(viii) 252.225-7001, Buy American Act and Balance of Payments Program (Apr 2003) (Applies to all contracts for supplies unless an exception is authorized by DFARS 225.1101(2) (i) through (iv)).

(ix) 252.225-7013, Duty-Free Entry (Apr 2003) (Applies to all contracts for supplies except those supplies that will not enter the customs territory of the United States).

(x) 52.232-33, Payment by Electronic Funds Transfer-- Central Contractor Registration (May 1999). (Applies when the payment will be made by electronic funds transfer (EFT) and the payment office uses the Central Contractor Registration (CCR) database as its source of EFT information.)

(xi) 52.232-34, Payment by Electronic Funds Transfer-- Other than Central Contractor Registration (May 1999). (Applies when the payment will be made by EFT and the payment office does not use the CCR database as its source of EFT information.)

(xii) 252.247-7023, Transportation of Supplies by Sea (May 2002) Alternate III (May 2002) (Applies when transporting any supplies by sea under this contract.)

(2) Listed below are additional clauses that may apply:

(i) 252.204-7004, Required Central Contractor Registration (Nov 2001) (Applies to all contracts unless an exception is authorized by DFARS 204.7302.)

(ii) 52.209-6, Protecting the Government's Interest When Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment (July 1995) (Applies to contracts over \$25,000).

(iii) 52.211-5 Material Requirements (Aug 2000) (Applies to contracts for supplies that are not commercial items).

(iv) 52.211-17, Delivery of Excess Quantities (Sept 1989) (Applies to fixed-price supplies).

(v) 252.225-7002, Qualifying Country Sources as Subcontractors (Apr 2003) (Applies if the contract is subject to the DFARS clause 252.225-7001, Buy American Act and Balance of Payments Program (see (b)(1)(viii) above)).

(vi) 52.243-1, Changes--Fixed Price (Aug 1987) (Applies to fixed-price contracts for supplies).

(vii) 52.243-1, Changes--Fixed Price (Aug 1987)

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Alternate I (Apr 1984) (Applies to fixed price contracts for services, other than architect-engineer or other professional services, and no supplies are to be furnished).

(viii) 52.243-1, Changes--Fixed Price (Aug 1987) Alternate II (Apr 1984) (Applies to fixed price contracts for services (other than architect-engineer services, transportation, or research and development) and supplies are to be furnished).

(ix) 52.243-1, Changes--Fixed Price (Aug 1987) Alternate V (Apr 1984) (Applies to fixed price contracts for research and development).

(x) 52.247-29, F.o.b. Origin (Jun 1988) (Applies to supplies if delivery is f.o.b. origin).

(xi) 52.247-34, F.o.b. Destination (Nov 1991) (Applies to supplies if delivery is f.o.b. destination).

(xii) 52.222-42, Statement of Equivalent Rates for Federal Hires (May 1989) (Applies if the contract amount is expected to be over \$2,500 and the contract is subject to the clause 52.222-41, "Service Contract Act of 1965, As Amended" (see (b)(1)(vi) above)).

In compliance with the Service Contract Act of 1965, as amended, and the regulations of the Secretary of Labor (29 CFR Part 4), this clause identifies the classes of service employees expected to be employed under the contract and states the wages and fringe benefits payable to each if they were employed by the contracting agency subject to the provisions of 5 U.S.C. 5341 or 5332.

This Statement is for Information Only:

It is not a Wage Determination

Employee Class	Monetary Wage--Fringe Benefits
_____	_____
_____	_____
_____	_____

(xiv) 52.246-11 Higher-Level Contract Quality Requirement (Feb 1999) (Applies to contracts when the contracting officer finds it is in the Governments interest to require that higher-level quality standards be maintained and such standards are selected and identified in the clause).

The Contractor shall comply with the higher-level quality standard selected below. [If more than one standard is listed, the offeror shall indicate its selection by checking the appropriate block.]

Title	Number	Date	Tailoring
* _____	_____	_____	_____
* _____	_____	_____	_____
* _____	_____	_____	_____
* _____	_____	_____	_____

[Contracting Officer insert the title, number (if any), date, and tailoring (if any) of the higher-level quality standards.]

(c) FAR 52.252-2, Clauses Incorporated by Reference (Feb 1998). This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer

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will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

FAR clauses - <http://www.arnet.gov/far/>

DFARS clauses - <http://www.acq.osd.mil/dp/dars/dfars.html>

(d) Inspection/Acceptance. The Contractor shall tender for acceptance only those items that conform to the requirements of this contract. The Government reserves the right to inspect or test any supplies or services that have been tendered for acceptance. The Government may require repair or replacement of nonconforming supplies or reperformance of nonconforming services at no increase in contract price. The Government must exercise its postacceptance rights--

(1) Within a reasonable period of time after the defect was discovered or should have been discovered; and

(2) Before any substantial change occurs in the condition of the item, unless the change is due to the defect in the item.

(e) Excusable delays. The Contractor shall be liable for default unless nonperformance is caused by an occurrence beyond the reasonable control of the Contractor and without its fault or negligence, such as acts of God or the public enemy, acts of the Government in either its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, unusually severe weather, and delays of common carriers. The Contractor shall notify the Contracting Officer in writing as soon as it is reasonably possible after the commencement of any excusable delay, setting forth the full particulars in connection therewith, shall remedy such occurrence with all reasonable dispatch, and shall promptly give written notice to the Contracting Officer of the cessation of such occurrence.

(f) Termination for the Government's convenience. The Government reserves the right to terminate this contract, or any part hereof, for its sole convenience. In the event of such termination, the Contractor shall immediately stop all work hereunder and shall immediately cause any and all of its suppliers and subcontractors to cease work. Subject to the terms of this contract, the Contractor shall be paid a percentage of the contract price reflecting the percentage of the work performed prior to the notice of termination, plus reasonable charges that the Contractor can demonstrate to the satisfaction of the Government, using its standard record keeping system, have resulted from the termination. The Contractor shall not be required to comply with the cost accounting standards or contract cost principles for this purpose. This paragraph does not give the Government any right to audit the Contractor's records. The Contractor shall not be paid for any work performed or costs incurred that reasonably could have been avoided.

(g) Termination for cause. The Government may terminate this contract, or any part hereof, for cause in the event of any default by the Contractor, or if the Contractor fails to comply with any contract terms and conditions, or fails to provide the Government, upon request, with adequate assurances of future performance. In the event of termination for cause, the Government shall not be liable to the Contractor for any amount for supplies or services not accepted, and the Contractor shall be liable to the Government for any and all rights and remedies provided by law. If it is determined that the Government improperly terminated this contract for

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default, such termination shall be deemed a termination for convenience.

(h) Warranty. The Contractor warrants and implies that the items delivered hereunder are merchantable and fit for use for the particular purpose described in this contract.

(End of clause)

52.225-13 RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (JUN 2003) (DEVIATION) (Note: The basic FAR clause 52.225-13 appears in paragraph (a)(1)(4) of the clause 52.213-4 appearing elsewhere in this document. However, the basic clause is replaced by this deviation version of the clause.)

(a) Except as authorized by the Office of Foreign Assets Control (OFAC) in the Department of the Treasury, the Contractor shall not acquire, for use in the performance of this contract, any supplies or services, if any Executive order administered by OFAC, or OFAC's regulations set forth at 31 CFR Chapter V would prohibit such a transaction by a person subject to the jurisdiction of the United States.

(b) Except as authorized by OFAC, most transactions involving Cuba, Iran, Libya, and Sudan are prohibited, as are most imports into the United States from North Korea. Lists of entities and individuals subject to economic sanctions are included in OFAC's List of Specially Designated Nationals and Blocked Persons. More information about these restrictions as well as updates with respect to restrictions imposed after April 2003, is available in the OFAC's regulations at 31 CFR Chapter V and/or on OFAC's website at <http://www.treas.gov/ofac>.

(c) The Contractor shall insert this clause, including this paragraph (c), in all subcontracts.

(End of clause)

Your quotation must include the following information:

Price list number and date

or

Cost breakdown by direct labor (list categories, hours and pay rates). In addition to the direct rates, provide the applicable indirect information (G&A), overhead, facilities capital cost of money (FCCM) and profit.

or

Applicable General Services Administration (GSA) contract number.

If unable to quote FOB, Destination, please complete the following:

FOB Point _____

Estimated Shipping Charge _____

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Business size:

Large _____ Small _____ Nonprofit _____

Cage Code _____

Tax Identification Number (TIN) _____

DUNNS _____

ELIGIBILITY REQUIREMENTS

All contractors and individuals doing business with the Federal Government must be registered at the Contractor Central Registration Database located at:
<http://ccr.dlsc.dla.mil/>.

ELECTRONIC DISTRIBUTION OF CONTRACT DOCUMENTS

All contract award and contract modification documents will be distributed electronically using the Navy Air Force Interface (NAFI) system. The contractor's copy will be provided in portable document format (pdf) as an attachment to an e-mail that will be sent to the contractor by the NAFI system. A pdf file may be accessed using Adobe Acrobat Reader software. This is a free software that may be downloaded at:
<http://www.adobe.com/products/acrobat/readstep.html>

Provide the following information that will be used to make electronic distribution for any resultant contract:

Name of Point of Contact to Receive
Distribution _____

Phone Number for Point of Contact _____

E-Mail Address for Receipt of Distribution _____

USE OF THE GOVERNMENTWIDE COMMERCIAL PURCHASE CARD

Will you accept the Governmentwide Commercial Purchase Card as a method of purchasing supplies and/or services.

_____ Yes _____ No

Will you accept the Governmentwide Commercial Purchase Card as a method of payment for your invoice.

_____ Yes _____ No

DUTY FREE ENTRY

Will any materials being shipped to the Government require a

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duty-free entry certificate for foreign supplies.

☐ Yes ☐ No

If yes, please include dollar amount \$ _____

MULTI-CHANNEL DATA ACQUISITION SYSTEM SPECIFICATION

The Multi-Channel Data Acquisition System to be furnished will be used for the following:

- Acquiring raw time series data and storing for later analysis.
- Acquiring Narrowband and fractional Octave band (synthesized and ANSI) acoustic data up to 100kHz.
- Acoustic data will be analyzed using stable averaging, exponential averaging, and maximum and minimum holding.
- Acoustic Data will be simultaneously stored and analyzed.
- Vibration levels will be displayed in displacement and acceleration for spectral and autopower functions.
- Both voltage and ICP accelerometers, hydrophones, and microphones will be used.
- Embedding acoustic data in Microsoft office documents for reporting purposes.

The Multi-Channel Data Acquisition System to be furnished shall possess the following operational and performance features and characteristics:

Hardware

- 8 input channels
- Supports direct transducer coupling for voltage and ICP
- Sample rate up to 204 kHz
- Simultaneous throughput to host PC disk while processing (FFT, third octave)
- Software controlled channel setup with hardware LED indicators

Data Acquisition Software:

- Direct access to any ODBC (Microsoft Office) database for transducer information
- Embedded, user-specified, documentation
- Channels can be grouped into vibration, acoustic, static and tachometer channels
- Support for multiple reference channels
- Averaging methods include stable averaging, exponential averaging, Maximum hold and Minimum hold
- Following functions be provided: Time, Spectra, Frequency Response Functions (FRF) (H1, H2, Hv), Octave Band and Fractional Octave Band Analysis (1/1, 1/2 1/3, 1/6, 1/12, 1/24) - with ANSI emulation, Cross-Power, Auto-Power, and Sound Intensity. FRF's and crosspowers are calculated between responses and all reference channels.
- Simultaneous throughput to host PC disk while processing (FFT, order track, real-time third octave bands)
- Vibration channels be converted online to displacement/velocity/acceleration for spectra and autopower functions
- User-configurable display layouts with 2D (Front/Back, Upper/Lower, Octave, Bode), waterfall and colormap displays
- Single, double, harmonic, ratio and crosshair cursors
- Change cursor properties, annotation style, amount of decimal places
- Support for embedding of data in Microsoft documents (e.g. Word, Excel, Powerpoint) using Active Pictures

Recorded Time Data Processing Software:

Displays/Plotting:

- Static Display (2D-3D Functions): Front/Back, Upper/Lower, Nyquist, Octave, Waterfall, Color Map: link of time and frequency cursors/selected segments with other displays/forms through software bus.
- Strip Chart Display: Multi-channel, Overview, Detailed (zoom), Indicators (Meter, Digital, Bar) with user definable alarm levels and functions (RMS, MAX, MIN, Cursor Value), Auto-tailing, Segment and Cursor selections, user definable markers (point or segment). Automatic scrolling
- Powerful plot-format editor allows user definable plot formats (any type/combination of windows, drawing capabilities, text annotation, inclusion of color bitmaps/logos) interactive, automatic and batch plotting modes; automatic reduction for large time histories.

User Attributes/Markers:

- All time history data be complemented with (any number of) user definable attributes of following types: float, integer, string, ordinate (start, increment, rate), variable length (eg. extra data dump).
- User attributes are stored with data in the same file: can be consulted at any moment.
- User Attributes can be defined on the level of the Time Data File (multiple channels) or the recording (one channel).
- Markers: point or segment markers can be graphically set for identifying specific events/segments. Markers view: 6 color, 3 line styles, 3 thickness.
- Markers editing: cut, copy, paste, move, duplicate, modify, add, key code, description.

Editing:

- Icon driven graphical editing, single- or multi-channel
- Editing operations: undo, cut, copy, truncate, duplicate, insert at cursor, overwrite at cursor, replace segment, modify segment (offset, mean, scale, RMS, replace by constant, replace by curve), mute, straighten
- Fading: none, linear, 1/2 cosine, power, mute for user definable duration.

Trace Manipulation:

- Align, Multiplex and De-multiplex, Mix, Revert, Compose
- Interpolate: spline, polynomial, sinc
- Digital re-sampling: up/down, any new frequency or ratio, configurable anti-alias filtering
- Trend removal
- Curve fitting
- Moving and Exponential Average

Trace Analysis:

- Conversion of pulse-train(s) to rpm or angle trace with user definable: # pulses, transmission, cross-level, upper/lower tolerances, hold-off %, up-sampling and equidistant interpolation
- Envelope analysis based on Hilbert transform
- Sine Analyzer: amplitude, phase, frequency and sampling speed
- Sine Calibration: dB/Lin, multi-channel
- Quick single value statistics: min (x,y,index), max (x,y,index), mean, RMS
- Histogram: standard, cumulative, probability, density, normalization

Trace Mathematics:

- Any mathematical expression (+, -, *, ÷) between traces and/or scalars, all provided in a trace calculator.
- Integration: time domain (trapezium, Simpson, four point & Bode), frequency domain.
- Differentiation: time & frequency domain.

Trace Generation:

- Signal generator: sine, sweep, saw-tooth, square, random noise, controlled oscillator (with user definable carrier frequency and amplitude; fixed and variable frequency and phase deviations)

Audio Feedback:

- All time history data can be played back through the multi-media outputs of the HP9000 workstation or Windows NT/2000 PC (16 bit, CD quality)
- Replay of segment or starting at cursor through internal speaker or external headphones/speaker system.

Frame Statistics:

- Statistic evaluation on multi-channel time histories: frame length in samples or seconds, overlap in %, samples or seconds.
- Statistical functions: min, max, range, extremum, sum, mean, variance, skewness, kurtosis, standard deviation, rms, crest factor, mean absolute deviation, extreme deviation, Markov regression, 10th-25th-75th and 90th-percentile, median, integration.

Spectral Processing:

- Any spectral function on complete/segments multichannel time histories, with logging of processing history.
- Spectral Functions: DFT, FFT, Maximum Entropy Method (MEM), autopower, multiple input multiple output (MIMO) crosspower, MIMO FRF, impulse response, MIMO coherence, principal component analysis (PCA), autocorrelation (time & frequency domain), crosscorrelation (time & frequency domain), 3D spectral map, 3D MEM map.
- Processing parameters: any block size (no limit on size), format (linear. power or power spectral density - PSD), scale (peak, RMS), window (Uniform, Hanning, Hamming, Kaiser-Bessel, flattop), weighting (A, B, C, D)
- Optional Time Variant Frequency Analysis (Wavelets, Wigner-Ville)

Digital Filtering:

- Finite impulse response (FIR): Window, Multi-window, Remez
- Infinite impulse response (IIR): Bessel, Butterworth, Chebyshev, Inverse Chebyshev, Cauer, Inverse design.
- Arbitrary FRF
- Graphical definition of cut-off frequencies through single and double cursors.
- Direct graphical interpretation of filter frequency response function FRF, phase and group delay.
- Capability of grouping different filters in one filter with user definable name.
- Multiple filters (software regulates ideal cascading) can be set for filtering multiple channels at the same time.
- Filter modes: direct, zero-phase.
- User-designed filters can be saved in user-definable defaults for later use.
- Octave Filtering: ANSI-IEC compliant 1 and 1/3 Octave filtering (multiple bands in one run). - Harmonic Tracking (Kalman fixed frequency and order filtering)

Counting:

- Range-pair, Extremum, Level crossing, mean, range, range-pairmean, range-pair-range

Customization:

- A snap-shot function allows the user to define specific layouts and save specific processing parameters for a specific processing tasks. Multiple snap-shots can be saved under different names

and recalled whenever required. The snap-shot function exists for : Digital Filtering, Frame Statistics and the main Time Data Processing layer.

- Configurable menubar and ICON toolbar: the user can configure the menu entries, as well as ICONS in the processing toolbar, which will start a specific command or a user program.
- A special mechanism (basename & context) allows the system to be configured for specific tasks. In this way user interface and processing options will depend on the type of task one will have to perform; eg. one can have a set-up for analyzing one type of test article, and a totally different one for a different type of test article with different defaults and options.

The Multi-Channel Data Acquisition System to be furnished must also capable of being expanded or modified to accommodate the following:

Hardware

- Expandable up to 960 input channels
- Support for direct transducer coupling, including charge, strain and microphone
- Support for tachometer conditioning and order tracking
- Simultaneous throughput to host PC disk while processing (order track, real-time third octave)

Recorded Time Data Processing Software:

Data I/O

- Instrument recorder interfaces (optional): SONY PC200 Series, SONY SIR-1000, TEAC RD and RX Series, RACAL-HEIM DataRec Series, Audio DAT & Head Acoustics HDR-IV, OPTIM MEGADAC, Metrum RSR-512, RACAL Storeplex range, A480, RACAL HEIM
- File Translators (optional): MTS RPCIII™, nCode nSoft DAC™, HP SDF™.

Trace Manipulation:

- Adaptive re-sampling from any reference domain to any reference domain and back again (e.g. resample using engine RPM to angle domain)

Spectral Processing:

- Time Variant Frequency Analysis (Wavelets, Wigner-Ville)

Digital Filtering:

- Harmonic Tracking (Kalman fixed frequency and order filtering)

Block Data Processing:

- Allow manipulation of time history traces, as well as results blocks (spectra, histograms, waterfall maps).
- Development of macro-based autosequences for automatic sequential processing.